ASSESSMENT OF THE USE OF PERFORMANCE-BASED INCENTIVES IN PERFORMANCE-BASED MANAGEMENT AND MANAGEMENT AND INTEGRATION CONTRACTS

REPORT TO THE SECRETARY
Prepared by the Office of Procurement and Assistance Management

October 1997

Report to the Secretary of Energy
Assessment of the Use of Performance-Based Incentives
in Performance-Based Management and Management and Integration Contracts

Table of Contents

Report to the Secretary of Energy
Assessment of the Use of Performance-Based Incentives
in Performance-Based Management and Management and Integration Contracts

Executive Summary

Background

In February 1994, the Department of Energy's (DOE) Contract Reform Team (CRT) issued its report entitled *Making Contracting Work Better and Cost Less*. The report culminated a year-long effort to analyze weaknesses in DOE's contract management practices, with a primary focus on contracts for the management and operation of the Department's major sites. To address these issues, the CRT recommended, and the Secretary of Energy approved, over 40 specific actions dealing with such topics as increased competition, increased contractor financial responsibility for certain costs, improved environmental safety and health programs, and the use of better defined, results-oriented statements of contractor performance expectations (also known as performance-based contracting). The combination of the CRT's recommendations resulted in a new form of management and operating (M&O) contract - a Performance-Based Management Contract (PBMC).

One of the components of the PBMC was the use of appropriate incentives to reward superior performance and discourage substandard performance. In this context, the report recommended that DOE consider the use of an incentive fee approach in which an identified element of the contractor's "profit" would be tied to the achievement of specific technical performance objectives, delivery schedule, or cost control objective. This approach has been commonly referred to as "performance-based incentives (PBI)." The report further suggested the use of multiple fee arrangements within a single contract, such as the use of both an incentive fee as well as an award fee provision, and the development of cost reduction incentive programs.

The Department, in an effort to expedite its contract reforms in the large number of M&O competitions and renegotiations it faced within the 2-year period following the publication of the report, developed an aggressive strategy of implementing specific reform principles in actual contracts concurrent with the development of key policies and practices. The result of this approach was that the Department was successful in rapidly changing a significant number of contracts in a relatively short period of time. These new contracts provided a much greater focus on achieving measurable results. However, this approach necessarily increased the risks of implementation, particularly in the initial application of contract reform concepts. Further, the consequences of mission changes, severe budget constraints, and rapid personnel reduction introduced a degree of instability which has affected the Department's reform efforts.

Objectives

Recently, the Department's own internal reviews, as well as reviews conducted by the General Accounting Office (GAO) and the DOE Office of the Inspector General (IG), highlighted issues and problems at individual DOE sites in the early development and use of performance objectives, measures, and incentives as areas of vulnerability that required management attention. Consequently, on March 19, 1997, Secretary of Energy Federico Peña announced that a more comprehensive review of PBIs would be conducted.

The Office of Procurement and Assistance Management, in cooperation with certain DOE field organizations and representatives of the program offices, evaluated the Department's use of PBIs and related performance objectives and measures in M&O and management and integration (M&I) contracts. The objective of the assessment was to assure that such incentives were rational, linked to well-defined performance objectives and measures, and properly administered. The lessons-learned from the assessment were intended to be used to improve future PBI applications.

In the conduct of this assessment, 20 M&O/M&I contracts were reviewed in accordance with a standard criteria and review methodology.

Results of the Assessment

The use of performance-based objectives and measures has served the Department well in focusing contractor work efforts on results. In addition, there are advantages to using PBIs in M&O and M&I contracts.

More specifically, the assessment indicates that:

- The use of performance-based objectives generally has been effective in directing a contractor's management attention to desired performance outcomes. Similarly, the linkage of financial incentives/disincentives to performance objectives has served to motivate the contractor's achievement of those objectives, particularly in the case of "for profit" contractors.

- The process of developing and negotiating performance objectives, measures, and related incentives has improved communications concerning performance expectations among internal Departmental organizations as well as between the Department and its major contractors.

- Since 1994 field organizations have taken actions to improve the quality of their performance-based contracts as new approaches were instituted and past experience and experimentation provided "lessons-learned." In those contracts having experienced several annual iterations of performance objectives/incentives, continuous improvement in quality was noted. For example, many instances were observed where performance objectives and measures were strengthened over time to promote higher levels of contract performance.

There are growing indications that the application of performance-based contracting practices is having a positive impact on the Department's ability to meet its mission needs. For instance, the Hanford Site reported that the adoption of an aggressive performance objective/incentive program since fiscal year (FY) 1995 facilitated significant cost reductions. Among other things, the Hanford Site developed an innovative deactivation approach at the PUREX facility, accelerating project schedules by 16 months and saving a total of $77 million. The site also reduced liquid volumes in the Hanford Tank Farms through operation of the Evaporator Facility, creating 27 million liters of additional storage space and allowing cancellation of $300 million in new storage tank construction.

At the Idaho National Engineering and Environmental Laboratory's advanced test reactor, specific performance objectives and related incentives contributed to the contractor's achieving: the best operating efficiency since 1969; the lowest operating costs since 1991; the lowest unplanned outages in 8 years; and the lowest radiation exposure in its history.

At the Kansas City Plant, the use of PBIs contributed to reducing total safety case incident rates to one of the best in the DOE complex and to a level that is a benchmark for industry.

Performance-based objectives and related incentives at the Savannah River Site helped to focus the contractor's efforts to advance strategic environmental management goals in a number of projects. For instance, by providing incentives for increased canister production at the Defense Waste Processing Facility, the site expects to reduce life-cycle costs by closing the facility ahead of schedule, thereby saving maintenance and surveillance costs in future years.

Notwithstanding this positive direction, the review identified a number of problems in the effective implementation of PBIs, particularly in the early stages of its application, and consequently a number of opportunities to significantly improve future performance. Although the use of performance-based objectives and measures has been generally successful, the application of PBIs has, in some cases, been less effective. While the nature and extent of the issues discussed in this assessment varies among field organizations and contracts, common issues exist that highlight potential vulnerabilities and offer opportunities for improvement. These common issues provide a reasonable basis for making recommendations for future actions that should be taken to improve the Department's development and administration of PBIs. It should be noted that the Department's experience in the use of performance objectives and related incentives is in its infancy. If industry quality programs and internal government experience under the Government Performance and Results Act are useful benchmarks, immediate perfection in this area should not be expected. Rather, DOE should anticipate an iterative process of continuous improvement.

Critical findings relative to the use of PBIs identified in this assessment include the following:

- Government-wide, Department-wide and local implementing guidance on the development and administration of performance objectives and related incentives was limited and, generally, did not address such issues as establishing baselines, properly allocating fee amounts to specific incentives, and restructuring award fee mechanisms to work effectively in concert with PBIs.

- Organizational roles and responsibilities for the development of guidance as well as the development of performance objectives and incentives often were not clear.

- There was no single organization at Headquarters responsible for the direction of performance-based objectives and incentives. Likewise, there was no organization in most field offices designated to coordinate and integrate the PBIs. In some cases, senior field office management was not adequately involved in the field office development of objectives, measures, and incentives.

- There was inadequate focus on the type of performance objectives appropriate for specific incentives and for limiting the PBIs to those objectives. Consequently, the number of performance-based objectives tied to specific incentives was in some cases excessive, did not directly relate to the critical strategic or tactical objectives of the program or site, and/or represented areas not suited for specific incentives. This was particularly true in the first annual iteration of applying performance-based contracting.

- Although many offices have developed both formal and informal processes and procedures for administering PBIs, actual implementation was sometimes inconsistent and resulted in a lack of discipline in critical areas of PBI development and contractor performance validation.

- In some cases, documentation was insufficient to adequately explain how objectives, measures, and incentives were derived.

- Performance objectives sometimes were overly focused on process milestones or the development of internal systems rather than outcomes.

- The amount of fee allocated to specific performance objectives was not always reflective of the actual value or importance of the work.

- PBIs were frequently used to incentivize performance; however, controls on the associated costs often were limited.

- DOE and contractor financial systems generally are budget-based and do not segregate and track costs at the performance incentive level. This has had an impact on DOE's ability to establish meaningful cost baselines and to monitor the cost of performance under specific incentivized work efforts in relation to the total cost of the contract and under cost reduction incentive programs.

- In some cases, there was an over-reliance on contractor-supplied information to establish performance baselines and to validate performance accomplishment; validation methods were not always formally defined.

- Cost reduction incentives have had limited utility in the absence of performance and fee baselines and the availability of accounting systems that will track associated costs.

- Cost reduction incentives did not always comply with Departmental guidelines.

Recommendations

The assessments conducted by the Office of Procurement and Assistance Management, in conjunction with DOE field organizations and program representatives, identified several opportunities for both short- and long-term improvements in performance-based contracting generally, and the use of PBIs specifically. The recommendations include various insights previously offered by the Office of the Inspector General. The key recommendations are:

1. Institute a more structured management approach to the development of performance-based objectives, measures, and incentive mechanisms and to the conduct of related contract administration functions.

- For the immediate future, performance objectives and related incentives should be reviewed and approved by the Office of Procurement and Assistance Management and cognizant program organizations prior to contract award/modification to ensure that the lessons learned from this assessment and the reviews conducted by IG are reflected in the final products.

- Within the next few months, each contracting activity that has not already done so should institute a structured process for the development of contract performance objectives and incentives consistent with Department standards. This process should include:

  - early participation by key Operations Office program, technical, and administrative personnel to ensure the identification of applicable DOE strategic, program, and site plan goals and objectives that should drive contract performance objectives;

  - management consideration of the extent to which mixed fee arrangements are consistent with the desired performance objectives and measures;

  - the identification of those objectives and measures which lend themselves to linkage with specific incentives in accordance with established criteria;

- an assessment of the rationality of any specific financial incentives applied to individual objectives; and

- top management verification that the nature, extent, and mix of objectives and incentive approaches are consistent with mission priorities.

- The cognizant Head of the Contracting Activity should, as part of an overall contract administration plan for each PBMC and M&I contract, identify the mechanisms, responsibilities, and authorities for ensuring that contractor performance against established objectives is appropriately monitored and that performance achievements are verified. This aspect of the plan should specifically identify the organizational element and contracting officer's representative assigned responsibility for such verification.

2. Strengthen the Department's framework of directives and instructional information on the use of PBIs.

- Identify a single authority within HQ for the issuance of guidance on the use of PBIs and their relationship to performance objectives.

- Identify a single authority within each field organization to coordinate the development of performance objectives and related incentives.

- Issue guidelines which establish specific parameters for developing performance objectives and the application of PBIs. The guidelines should, among other things, provide direction on:

  - the use of performance objectives and measures within both an award fee and an incentive fee context;

  - the appropriate relationship between award fee and incentive fee approaches;

  - the balance between subjective and objective as well as process and outcome measures;

  - the selection of the most important performance objectives for specific incentives based on mission criticality; and

  - the limitations on the use of specific incentives for those objectives which are not: clearly defined; capable of objective performance measurement; susceptible to establishing a rational relationship between the objective and the fee; and subject to the identification of technical, delivery, or cost baselines and the linkage of both technical and cost incentives, as appropriate.

- Re-issue the Department's cost reduction incentive guideline developed under the Contract Reform Team initiative as a directive to ensure uniform application.

- Issue the Department's draft fee policy as a regulation to, among other things:

  - assure the availability of award fee incentive approaches in conjunction with performance-based contracting;

  - define the appropriate use of incentive fees as part of a mixed fee arrangement, establish preconditions for the use of incentive fees, and provide regulatory direction on the allocation of total available fee to various incentive mechanisms, the various cost reduction incentives and the preconditions for their use;

  - prevent the sub-optimization of performance against objectives not subject to specific incentives; and

  - require the reduction or elimination of specific incentive fees in the event of major performance failure in unrelated areas of performance.

- Update the Department's training materials on performance-based contracting to reflect the lessons-learned from this assessment and any new directives that are issued.

- Provide ad-hoc training throughout the Department to work teams involved in the development of performance objectives and the application of incentive mechanisms.

- Require personnel involved in the development and use of performance objectives and incentives to receive appropriate training prior to their participation.

3. Establish support mechanisms to assist contracting activities in the development and use of PBIs.

- Create an interdisciplinary team of HQ/Field experts to assist contracting activities in identifying critical path performance requirements and applying rational and effective PBIs.

- Provide an annual "lesson learned" training forum to share experiences on creating effective objectives, measures, and incentives.

- Develop one or more models on the appropriate use of defined performance objectives within both an award and incentive fee context.

- Review, in conjunction with the Chief Financial Officer, the status of the Department's systems for the collection of cost and other data at a level adequate to establish and maintain technical and cost baselines necessary to support performance incentives. Following such review, make adjustments, as necessary.

4. Ensure that recommendations contained in this report have been implemented and are effective.

- Within 3 months, provide a report of corrective actions taken by contract activities to address problems identified in individual contract reviews, and describe problem mitigation actions taken for FY 1998 objectives and incentives.

- Within 3 months, provide a status report on the implementation of the recommendations contained in this report.

- Within 18 months, provide an assessment of the effectiveness of this report's recommendations by conducting a limited review of the next two iterations of performance objectives and related incentives.

The various contract reviews conducted in preparing this assessment indicate that progress has been made sine the initial application of performance-based incentives. Nonetheless, further improvement is needed.

Notwithstanding severe resource constraints and personnel reductions, many of the foregoing recommendations are achievable in the near future. Indeed, a number of recommendations are already in the process of implementation or have already been accomplished. A few of the recommendations, such as the review and potential modification of the Department's accounting and cost collection systems and requirements, may require considerable long-term effort. All of the recommendations will require collaborative management direction and support to include not only contract, but program, field and financial management as well.

I. INTRODUCTION

With the publication of the Report of the CRT, *Making Contracting Work Better and Cost Less*, in February 1994, DOE embarked on a major initiative to revise many aspects of its traditional approach to the award and management of its contracts for the management and operation of its sites and facilities. The report contained 48 recommendations intended to: increase competition for M&O contracts; ensure the protection of workers, the public and environment; establish greater contractor financial accountability in the areas of fines and penalties, third party claims, and the loss or damage to government property; expand fixed price contracts and subcontracts; reduce the costs of operation; and introduce the concept of performance-based contracting. This latter element of the contract reform initiative encompassed the greater use of well defined, objective, and outcome oriented performance expectations both in work statements and specific performance objectives and measures. The concept also included the linkage of monetary and non-monetary incentives to the achievement of objectives in order to better motivate excellent performance and discourage substandard performance. It is this aspect of the contract reform initiative which is the subject of this assessment.

Prior to the Department's contract reform initiative, the typical M&O contract was a cost-reimbursement instrument having a broad statement of work, limited and subjective performance measures, and little allocation of contractor performance and financial risk. Contracts with nonprofit organizations usually provided for either a fixed fee or, in the case of educational institutions, a fixed "management allowance." Contracts with for-profit organizations generally contained an award fee. Under the award fee scheme, performance objectives reflecting key areas of contractor performance emphasis were grouped together and assigned a monetary fee. Typically, the areas of emphasis reflected a mix of key mission, business and financial management, and socio-economic objectives. Periodically throughout the life of the contract, the Department would assess the contractor's performance in these areas through largely subjective evaluation criteria to determine the fee to be paid.

The award fee approach provided DOE with great latitude in determining the amount of fee earned by a contractor by permitting DOE to apply non-quantifiable, subjective considerations and judgmental trade-offs in its award fee decisions. Conceptually, the approach provided flexible leverage to influence contractor behavior. However, as a result of contract administration problems associated with the vagueness and subjectivity of objectives, as well as a questionable track record of reducing fees at some sites for poor performance, award fee mechanisms became viewed as ineffective to spur improved contractor performance.

Under contract reform, the Department created a new form of the M&O contract which it referred to as a PBMC. A PBMC generally reflects the totality of the major elements of contract reform, but most specifically the use of performance-based objectives, measures, and related incentives. Because of the significance given to the need for more definitive objectives, and their linkage to performance incentives, as well as prior criticisms of award fee administration, most DOE contracting activities began to experiment with the use of PBIs; that is, specific monetary incentives tied to the successful accomplishment of specific performance objectives and measures. The PBIs were similar in concept to incentive fee type arrangements as defined by the Federal Acquisition Regulation. In some cases, PBIs were used in conjunction with an award fee mechanism; in others, PBIs became the exclusive method for awarding fee.

From a practical standpoint, the use of specific incentives linked to discrete performance objectives has both advantages and disadvantages. The primary advantage of PBIs is the ability to target the accomplishment of specific critical work efforts by applying significant fee amounts to their successful achievement. However, this approach has a potential downside. Once a critical performance objective has been established and assigned an incentive, both DOE and the contractor are obligated to evaluate performance against a rigid set of criteria, and base the payment of a specific fee on that evaluation. Additionally, under the PBI approach, any failure to adequately define the scope of work activity to be performed or arbitrary assignment of fee make DOE and the contractor subject to criticism. Furthermore, one of the distinct advantages of award fee contracting may be lost where PBIs are the exclusive approach, namely, the Department's ability to make subjective evaluations and trade-offs in performance expectations and associated fee in order to preclude suboptimization of performance against certain objectives. Accordingly, the quality of the objective, the baselines from which performance will be measured, and the processes used to validate performance become critical since deficiencies in these areas will result in ineffective use of the incentive mechanism.

Efforts by DOE contracting activities to effectively use PBIs have been hampered by the relative inexperience of the program and procurement workforce in developing good performance objectives and measures as well as a lack of familiarity with an incentive fee-type approach. Additionally, minimal government-wide or internal policy or instructional material existed to assist in the effective development of objectives and related incentives. Further, DOE adopted an aggressive implementation approach for contract reform which resulted in the concurrent development of implementation guidelines with the award of competitive or renegotiated contracts consistent with the PBMC model. As a consequence, the Department has experienced problems in the successful application of PBIs.

II. BACKGROUND

Recently, the Department's own internal reviews, as well as reviews by DOE's IG and the GAO, on the development and use of performance objectives, criteria and incentives in M&O/M&I contracts have highlighted areas of vulnerability. On March 19, 1997, Secretary Federico Peña announced a comprehensive review of all PBMCs and M&I contracts at DOE, to ensure that performance measures were well-defined, that incentives were rationally and appropriately awarded, and that contractor performance-against-objectives was properly administered. This assessment responds to that direction.

III. OBJECTIVE

The objective of the assessment was to review the Department's PBMCs and M&I contracts to ensure that performance measures were well-defined, incentives were rational and appropriately awarded, and that contractor performance-against-objectives was properly administered. In brief, the assessment addressed:

- all aspects of PBIs and their potential relationships/impacts on award fee and cost savings programs;
- the current state of contract administration practices used to establish contractor performance objectives, develop and allocate fee and incentive amounts, and validate (i.e., inspection and acceptance) contractor performance;
- the identification of areas where improvement is needed; and
- the development of recommendations for corrective actions.

The critical focus of the assessment was to determine DOE's overall effectiveness in developing PBIs, selecting and applying performance measures to systems, and determining the type and magnitude of financial incentives in motivating contractors to perform at higher levels.

IV. EVALUATION METHODOLOGY

A strategy was developed to ensure that the assessment was conducted in a timely manner and consistent with the objectives of the Secretary's direction. The key components of the strategy included:

- the establishment of joint Headquarters and field organization responsibility for the contract-specific assessments. Attachment I provides the charter for the team;
- the development of standard data and information requirements for each PBI. Attachment II provides the standard data and information requirements that served as the basis for the assessment of individual PBIs;
- the review of the data and information packages for each PBI and interviews with key personnel directly involved in the development and administration of the PBIs; and
- the requirement for individual, contract-specific, analytical reports in accordance with a standard format. The format used is contained in Attachment III.

As a first step, a Headquarters team was convened to identify the contracts that would be subject to the review, develop a team charter, a standardized assessment methodology, and a strategy for accomplishing the review in a timely manner. In developing the strategy, there was a recognition that as a result of downsizing and major personnel reductions in the Department's administrative organizations staffing resources were not sufficient to permit full participation by Headquarters staff in each contract review. Accordingly, the team developed an approach in which joint Headquarters/field organization teams would review those contracts with the greatest performance and financial risks based on dollar value, the complexity of the fee structure, and the magnitude of the fee. Contracts that would not be subject to a joint team review would be assessed by teams comprised of field organization staff.

This resulted in the joint review of nine contracts. Eleven additional contracts were subject to self-assessments by the cognizant field organizations. All of the assessments were accomplished using the same criteria and review methodology. Attachment IV provides a listing of each contract subject to assessment and its categorization.

Further, the team determined that the Richland Operations Office contracts would be excepted from a joint Headquarters/field organizations review. The largest contract at the Richland Operations Office had previously been audited by the DOE IG and reviewed by a joint Headquarters/field organization review team. The Richland Operations Office also was in the process of conducting a self-assessment of its other major performance-based contracts at the time this review was announced. Based on the prior Headquarters involvement in the review at Richland, it was determined that the ongoing self-assessment would, with minor changes, meet the rigor of the new Departmental review. Nonetheless, the results would be used as part of the findings in the final Departmental report.

Preliminary “kick off” meetings were conducted by Headquarters personnel at each field organization to inform and educate senior management and evaluation team members on the scope, methodology and requirements of the assessment. Subsequently, field organizations began data and information collection activities. Upon completion of this effort, the teams convened to conduct the on-site assessment. Pertinent documentation was reviewed and interviews with the federal managers responsible for the development and administration of the performance incentives were conducted. Following the on-site joint reviews, individual reports were prepared. These on-site reviews and analyses form the basis of this report.

V. RESULTS OF THE ASSESSMENT

As a result of this assessment, a number of significant positive observations were identified:

- The use of performance-based objectives has proven effective in directing a contractor's management attention to desired performance outcomes. Similarly, the linkage of financial incentives/disincentives to performance objectives has served to motivate the contractor's achievement of those objectives, particularly in the case of “for profit” contractors.

- The process of developing and negotiating performance objectives, measures, and related incentives has improved communications concerning performance expectations among internal Departmental organizations as well as between the Department and its major contractors.

- Since October 1994, field organizations have taken actions to improve the quality of their performance-based contracts as new policies were instituted and past experience and experimentation provided “lessons learned.” In those contracts having experienced several annual iterations of performance objectives/incentives, continuous improvement in quality was noted. For example, many instances were observed where performance objectives and measures were strengthened over time to promote higher levels of contract performance (i.e., “stretch goals.”)

There are growing indications that the application of performance-based contracting practices is having a positive impact on the Department’s ability to meet its mission needs. For instance, the Hanford Site reported that the adoption of an aggressive performance objective/incentive program since fiscal year (FY) 1995 has facilitated significant cost reductions. Among other things, the Hanford Site has developed an innovative deactivation approach at the PUREX facility, accelerating project schedules by 16 months and saving a total of $77 million. The site also has reduced liquid volumes in the Hanford Tank Farms through operation of the Evaporator Facility, creating 27 million liters of additional storage space and allowing cancellation of $300 million in new storage tank construction.

At the Idaho National Engineering and Environmental Laboratory's advanced test reactor, specific performance objectives and related incentives contributed to the contractor's achieving: the best operating efficiency since 1969; the lowest operating costs since 1991; the lowest unplanned outages in 8 years; and the lowest radiation exposure in history.

At the Kansas City Plant, the use of PBIs has contributed to reducing total safety case incident rates to one of the best in the DOE complex and to a level that is a benchmark for industry.

Performance-based objectives and related incentives at the Savannah River Site have helped to focus the contractor's efforts to advance strategic environmental management goals in a number of projects. For instance, by providing incentives for increased canister production at the Defense Waste Processing Facility, the site expects to reduce life-cycle costs by closing the facility ahead of schedule, thereby saving maintenance and surveillance costs in future years.

Notwithstanding this positive direction, the review identified a number of problems in the effective implementation of PBIs and consequently a number of opportunities to significantly improve further performance. Although the use of performance-based objectives and measures has been generally successful, the application of PBIs has in some cases proven less effective. While the existence, nature, and extent of the issues discussed in this assessment varies among field organizations and contracts, common issues exist that highlight potential vulnerabilities and offer opportunities for improvement. These common issues provide a reasonable basis for making recommendations for future actions that should be taken to improve the Department's development and administration of PBIs.

It should be noted that the Department's experience in the use of performance objectives and related incentives is in its early stages. Benchmarking studies of industrial experience in the development of performance objectives and measures indicates that the creation of effective products is an evolutionary effort and that experience proved to be the greatest teacher. Similarly the government's own experience in implementing the Government Performance and Results Act indicates that initial efforts will be less than perfect during the early stages of implementation. Accordingly, DOE should anticipate an iterative process of continuous improvement.

In sum, critical findings relative to the use of PBIs identified in individual reviews included the following:

- Government-wide, Department-wide and local implementing guidance on the development and administration of performance objectives and related incentives was limited and, generally, did not address such issues as establishing baselines, properly allocating fee amounts to specific incentives, and restructuring award fee mechanisms to work effectively in concert with PBIs.

- Organizational roles and responsibilities for the development of guidance as well as the development of performance objectives and incentives often were not clear.

- There was no single organization at Headquarters responsible for the direction of performance-based objectives and incentives. Likewise, there was no organization in most field organizations designated to coordinate and integrate PBIs. In some cases, senior field office management was not adequately involved in the field office development of objectives, measures, and incentives.

- There was inadequate focus on the type of performance objectives appropriate for specific incentives and for limiting the PBIs to those objectives. Consequently, the number of performance-based objectives tied to specific incentives was in some cases excessive, did not directly relate to the critical strategic or tactical objectives of the program or site, and/or represented areas not suited for specific incentives. This was particularly true in the first annual iteration of applying performance-based contracting.

- Although many offices have developed both formal and informal processes and procedures for administering PBIs, actual implementation was sometimes inconsistent and resulted in a lack of discipline in critical areas of PBI development and contractor performance validation.

- In some cases, documentation was insufficient to adequately explain how objectives, measures, and incentives were derived.

- The amount of fee allocated to specific performance objectives was not always reflective of the actual value or importance of the work.

- Performance objectives sometimes were overly focused on process milestones or the development of internal systems rather than outcomes.

- PBIs were frequently used to incentivize performance; however, controls on the associated costs often were limited.

- DOE and contractor financial systems generally are budget-based and do not segregate and track costs at the performance incentive level. This has had an impact on DOE's ability to establish meaningful cost baselines and to monitor the cost of performance under specific incentivized work efforts in relation to the total cost of the contract and under cost reduction incentive programs.

- In some cases, there was an over-reliance on contractor-supplied information to establish performance baselines and to validate performance accomplishment; validation methods were not always formally defined.

- Cost reduction incentives have had limited utility in the absence of performance and fee baselines and the availability of accounting systems that will track associated costs.

- Cost reduction incentives did not always comply with Departmental guidelines.

The Department's assessment methodology provided for the analysis of PBIs in the context of six categories of consideration: the appropriateness of performance objectives; the appropriateness of fee allocations; the effectiveness in improving contractor performance; the effectiveness in improving cost efficiencies; adequacy of infrastructure and personnel; and the effectiveness of inspection and acceptance processes. A detailed analysis of the assessment's findings follows for each of these categories.

This summary report identifies a number of problem areas and sets out a series of recommendations aimed at improving DOE's use of PBI mechanisms in its PBMCs and M&I contracts. The problem areas were identified by assessing the contract-specific problem areas from the individual reports from a Department-wide perspective to determine whether the problem area represented a common issue that could benefit from a Departmental solution. Individual contract reviews identified a number of weaknesses in implementing PBIs in varying degrees of frequency and seriousness. Although the problem areas identified in this summary report may not have been experienced in all, or even, a majority, of the contracts reviewed, the frequency of the occurrence or seriousness of their nature necessitate that they be addressed systemically as well as locally. As a consequence, individual reports may identify both successes and deficiencies in PBI implementation and administration that differ in scope and magnitude from the broad findings of this report.

In reaching conclusions and recommendations on the problem areas set out in this summary report, a number of factors were considered, including:

- the recognition that each field office was attempting to improve its administrative processes and systems relied on for PBI administration; and

- that there were wide variances between field offices and within individual contracts in the level of sophistication in implementing PBIs. In addition, both the magnitude of "successes" and "deficiencies" observed varied over time. In this regard, there was a general trend toward correcting deficiencies, building on successful implementation approaches, and improving systems and processes in subsequent PBI cycles.

A. APPROPRIATENESS OF PERFORMANCE OBJECTIVES

<u>Assessment criteria</u>: *In reviewing the appropriateness of the performance objectives, the team examined whether performance objectives were: (1) important, meaningful and rational; (2) clear and understandable; (3) critical to mission; and (4) linked to the purpose of the contract, the mission and the strategic plan.*

Performance objectives were generally considered by the various field organizations to be important, meaningful and rational on the basis of their impact on the achievement of the field organizations' annual plan and/or the ability to measure and validate performance. However, particularly during the early stages of implementation, there was evidence that field organizations had difficulty in structuring objectives to reflect strategic goals, local business plans, and critical path areas. In addition, some performance objectives selected for incentives represented an inappropriate mix of both subjective and objective elements. In addition, there were instances where individual performance objectives were not properly integrated with other performance objectives where interdependencies existed.

Further, in some cases, specific performance objectives were included for incentives that may not have been appropriate because of inadequate performance baseline information. In other cases, the performance objectives lacked clear mission criticality because they were for activities that were in support of the site/facility mission or otherwise better suited for award fee application. In addition, when special emphasis was on performance measures built around rewarding continuous improvement, problems arose when the contractor's performance was already either best or worst in class compared to other benchmarks. In the future, more attention will have to be focused on the contractor's historical performance and the value of additional incentivization.

There were other instances observed where the importance of some performance objectives was questioned because they were vague and imprecise, narrowly focused, or emphasized areas which had only minor impact on the overall performance during the performance period. Other instances were observed where the importance of critical performance objectives was diluted because there was an excessive number of less significant performance objectives. There is a clear need for additional guidance relating to establishing critical performance objectives and structuring appropriate fee mechanisms.

In summary, four problem areas were identified as follows:

(1) **Inadequate Focus on the Critical Performance Objectives for Incentivization**

(a) **Nature and Extent of the Problem**
Performance-based objectives selected for specific incentives did not necessarily represent the critical or most important objectives necessary to achieve the mission priorities of the field organization. For example, in many cases, performance objectives were supportive of the mission, but not critical to the success of the mission. Further, objectives sometimes were overly focused on process milestones or the development of internal systems rather than outcomes. As a reflection of this problem, performance objectives and associated incentives often were too numerous to meaningfully motivate contractor performance to the achievement of the strategic performance objective of the project or to be effectively administered by personnel at the respective offices. However, in many cases, field organizations have reduced the number of incentivized objectives and improved their quality over successive contract performance periods as they gained experience.

(b) **Probable Causes**
A belief that only those objectives that were the subject of specific incentives met the goals of contract reform; a lack of meaningful discrimination among potential objectives to identify those that would most benefit from specific incentives.

(2) **Lack of Balance Between Objective and Subjective Performance Objectives**

(a) **Nature and Extent of the Problem**
At some field organizations, there was little evidence that both objective and subjective performance objectives were viewed "in concert" to assure that the total incentive package allocated fee to work based on its overall value in meeting the contract

objectives. The observation that award fee had ceased to be a motivator of contractor performance at many sites was a direct consequence of this situation.

(b) **Probable Cause**
The causes of the problem are: (1) the lack of HQ policy and local procedures requiring analysis and evaluation in support of decisions on balancing incentives; and (2) the lack of training and expertise in dealing with PBIs.

(3) **Contractor Participation in Establishing Performance Objectives**

(a) **Nature and Extent of the Problem**
Due to the distribution of resources between DOE and its contractors and time constraints involved developing the work scope, DOE field organizations often relied heavily on contractor input to define the work to be performed. While discussion, coordination, and negotiation with the contractor is necessary to communicate performance expectations and obtain negotiation "buy in," reasonable limits on such contractor support may have been exceeded. Over-reliance by field and program offices on unverified contractor input in the development of work scope and performance objectives gives rise to concerns regarding the objectivity of the recommendations, the selection of performance measures, validation systems, and the appropriateness of the baselines used to determine the amount of fee paid. However, in several cases, field organizations have taken positive steps to both independently develop PBIs and ensure the validity of data used for PBIs, including the use of third-party experts.

(b) **Probable Cause**
Implementing and institutionalizing incentive contracting takes time and requires the proper resources to administer and oversee. Examples were observed were difficulties in developing performance objectives and measure and verification processes had arisen due to the amount of government resources required and skills needed to award and administer the PBIs. Consequently, some field organizations relied too heavily on contractor support. In not all cases were these field offices able to verify the objectivity of the contractor assistance.

(4) **Inadequate Support Rationale On PBI Decisions**

(a) **Nature and Extent of the Problem**
Although the performance objectives generally appear to meet the evaluation methodology criteria identified in Section IV of this report, in many cases, there was a general lack of understanding of PBI concepts and supporting documentation to demonstrate a basis for decisions for selection and establishment of performance measures and associated incentives. Additionally, it was observed that documentation supporting the validation of contractor performance against objectives often was lacking.

(b) **Probable Causes**
A lack of written procedures and processes to provide guidance for the systematic establishment of performance measures and their associated incentives and the documentation to support decisions.

B. APPROPRIATENESS OF FEE ALLOCATIONS

<u>Assessment criteria</u>: *In reviewing the appropriateness of the fee allocations, the team examined whether: (1) fee allocations were developed in accordance with established procedures; (2) fee amounts were allocated to appropriate improvements; (3) fee amounts were reasonable in relation to overall cost of performance; and (4) fee amounts were commensurate with importance, difficulty of task and benefits to the Government.*

Generally, field organizations followed local procedures in allocating specific fee amounts to individual performance objectives. The assessment indicated that a mix of formal and informal procedures were relied on to accomplish this effort. In some cases, the procedures were not reduced to writing. In other instances, formal written procedures existed, but it was apparent that some personnel involved in developing the incentives were either unaware of their existence or did not follow them. In any case, much of the guidance was inadequate. The lack of meaningful procedures appeared to be due to the newness of the concept at both the Headquarters and field level. However, field organizations revised and formalized their procedures as Departmental policies were communicated and as experience proved certain procedures ineffective or inadequate.

Performance objectives (technical, production, delivery) were generally incentivized over cost objectives. Cost estimates and supporting documentation, that normally would be developed in the typical Government contracting regimen for a incentive fee type of contract, often were not obtained. Therefore, it was not always possible to confirm that fees allocated to individual performance objectives were reasonable in relation to the estimated cost of performance of that performance objective.

Many field organizations identified the lack of both an appropriate accounting system and cost data as reasons for not having a cost constraint or cost incentive associated with the specific performance objectives. Further, there often was no cost constraint placed at the total contract performance level, which should have been possible under existing accounting systems. Finally, overall costs associated with performance were not usually assessed to determine if they increased as a result of the contractor striving to earn the available incentive fee.

Several offices are exploring the development and implementation of accounting systems to provide such data. At least one field organization has initiated a pilot project to explore alternative cost control mechanisms. However, these efforts have been hampered by the cost associated with developing and implementing such systems. Constructing a cost estimating system, and recruiting and training personnel may be very expensive, as are efforts to modify existing accounting systems to segregate and track costs at the performance objective level.

In some cases, the amount of incentive assigned to an individual performance objective reflected a subjective programmatic determination as to the importance of either one performance objective over another or one performance objective to the overall mission. Accordingly, the importance of the performance objective, as measured by the amount of incentive fee allocated to it, was only determinable on a relative basis. This was particularly true where the field organization did not develop, or have, cost baselines for the work that was to be subject to incentivization. It was observed that, in some cases, importance was determined through a largely subjective approach. This approach typically consisted of computing the estimated cost benefit/savings to the Government and, adding to that estimate a factor reflecting the programmatic importance or value of the performance objective vis-a-vis all other performance objectives.

In summary, the problem area was identified as follows:

(1) **Weaknesses in Relating the Fee Amounts and Allocations to the Value of Work Performed**

(a) **Nature and Extent of the Problem**

During the review, many Field Offices were able to support the relative importance of the performance objectives based on strategic plans, site mission, annual performance plans, and other facts and information. However, it is unclear that the incentive fees assigned by many of the Field Offices were rational relative to the benefit to DOE. For example, when a fee was allocated to a specific performance objective, it could not always be established that fee was reasonable in relation to the overall cost of performance, or that fee amounts were established commensurate with the importance, difficulty of the task, or benefit to the government. An integral component of this problem is the fact that cost analyses often were not performed to determine the value of the work to be performed or the amount of fee to allocate to the incentive.

(b) **Probable Cause**

The probable causes for the fee allocation problems identified relate to: (1) the arbitrary migration of available award fee dollars to specific incentives; (2) the absence of a sound and justifiable basis for the allocating fee to individual performance measures, milestones, and metrics; and (3) inexperience and (4) the lack of meaningful cost baselines.

C. EFFECTIVENESS IN IMPROVING CONTRACTOR PERFORMANCE

Assessment criteria: *In reviewing the effectiveness of the incentives in improving contractor performance, the team examined whether: (1) tangible improvements over the baseline were achieved; and (2) the incentives represented achievement of "stretch" goals.*

Specific incentives should drive contractor performance to increasingly higher levels from a baseline that represents DOE's expectations for satisfactory work effort. In this regard, the team found that, where appropriate baselines or annual field organization plans existed, performance objectives were usually designed to ensure their accomplishment and promote higher levels of performance. However, there were concerns raised about both the significance of activities identified in the performance objectives and the reasonableness of associated costs and schedules at some field offices due to the absence of appropriate baselines at those field organizations, or the discipline with which existing baselines and annual field organization plans were established at such offices. Further, examples were noted where specific incentives were assigned to an "average" performance factor and, accordingly, did not incentivize higher levels of contractor performance.

The extent to which incentives represented "stretch" performance goals was relative to the experience and in-house expertise of the Field Office which developed, and the HQ program office which reviewed, them. "Stretch," at most Field Offices meant exceeding the baseline performance level or where the baseline was considered aggressive, achieving the baseline performance level. However, as a general observation, the relative projected difficulty in achieving the "stretch" goals was difficult to determine due to the inability to independently determine or duplicate the analysis which led to the selection of baseline objectives. However, as field organizations gained experience in establishing performance objectives, it appeared that they developed performance objectives that reflected adequate baseline and "stretch" performance. The establishment of validated baselines will significantly improve the development of challenging baseline and "stretch" performance objectives.

A number of reviews indicated that some objectives were overly dependent on variables outside of the contractor's control. In such cases, it was difficult to determine the importance of the incentive as an improvement over a performance baseline.

In sum, the problem areas were identified as follows:

(1) Performance Goals Were Inappropriately Structured and Incentivized

(a) **Nature of Problem**
Goals established for contractor performance in the initial stages of PBIs were frequently achieved and did not challenge the contractor to "stretch" during performance. Subsequent iterations of incentives reflected improvement.

(b) **Probable Cause**
The probable causes of the problem are:

(1) inexperience in process analysis;

(2) the lack of verified baselines from which to judge performance and over reliance on contractor input;

(3) the inability of information systems to provide data at a level which supported the performance incentive; and,

(4) systems not being tasked to collect data supportive of the incentive.

(2) **Inadequately Defined Variables Affecting Performance Made Validation Difficult**

(a) **Nature and Extent of the Problem**
In many cases, variables affecting outcomes and measures, which are key elements of performance objectives, were so poorly defined, written, and integrated that contractor progress against them was clouded. As a result, consensus between the field organization and the contractor often did not exist regarding the attainment of performance levels. The nature and extent of the problem varied based on the complexity of the performance objectives, the degree to which performance objectives could be defined, and the discipline associated with the field organization's development and administration of the performance objectives

(b) **Probable Cause**
The problem appeared to be caused by a lack of experience and training on the part of those individuals responsible for developing the performance objectives. This resulted in the selection of inappropriate objectives, as well as the absence of an integrated review by senior management.

D. EFFECTIVENESS IN IMPROVING CONTRACTOR COST EFFICIENCIES

Assessment criteria: *In reviewing the effectiveness of the incentives in improving contractor cost efficiencies, the team examined whether (1) tangible improvements over the baseline were achieved, (2) costs are verifiable and verified, and (3) benefits of improved performance realized.*

The assessment teams reviewed performance objectives related to cost reduction, stand-alone work orders and specific cost reduction programs. Although cost reductions were noted during the assessments, the teams found it difficult to verify the exact amounts and the real causes of the cost reductions in several cases. Improvements in cost efficiency, where incentivized, generally was accomplished directly through the use of specific cost reduction incentives. Under this approach, cost savings resulting from contractor performance for predetermined activities were shared between the DOE and the contractor in accordance with a pre-agreed formula.

During the assessment, concerns were raised at a number of field offices regarding the discipline associated with estimating work scope and cost baselines. In such cases, the lack of definitive baselines and tracking systems brought into question the accuracy of the amounts calculated for the contractor's share of the cost savings. Examples were noted where it was unclear if the improvements over the baseline were the result of: (a) direct actions taken by the contractor; (b) changes in the operational environment in which the contractor conducted the work; (c) estimates not being negotiated (at which time the costs would have been reduced); or (d) estimating variances or errors.

Also, it was generally observed that the use of cost constraints to control contractor expenditures was limited. Without the cost constraints, the contractor had little, or no, motivation to perform within the baseline estimate. At most field organizations, little analysis of the contractor's incurred costs was performed. This compounded the problem of determining exactly what, if any, improvements occurred to the cost baseline and the cause of any such improvements.
The accounting systems at most field organizations were not structured to track costs at the level of the performance objectives. Therefore, field organizations were not able to accurately verify costs associated with the achievement of the performance objectives.

Problem areas are summarized as follows:

(1) Cost Reduction Proposal Programs Baselines are Inadequate

(a) **Nature and Extent of the Problem**
In many cases verifiable cost baselines did not exist and systems were not capable of segregating and tracking costs at the level needed to verify cost reductions and understand the cause of the reduction.

(b) **Probable Cause**
The cause of the problem was twofold. First, most information systems were not capable of segregating and tracking costs at the appropriate level. Second, where capable systems existed, the lack of procedures requiring such segregation and tracking resulted in the system not being used as needed.

(2) Weaknesses in Establishing Tangible Improvements Over Baseline

(a) **Nature and Extent of the Problem**
Examples were found where it often was difficult to establish that improvements over baseline costs had been achieved as a direct result of performance incentives. While the field organizations reported that significant reductions in overall costs had occurred, they were sometimes unable to distinguish the portion resulting from performance incentives from that occurring as a result of work scope reductions, budget cuts and contract consolidation.

(b) **Probable Cause**
Costs were not accumulated at the appropriate level to assess technical performance and cost because: (1) procedures did not require that baselines and related criteria be established and adequately documented; or (2) of the inability of some financial systems to segregate and track costs at the appropriate performance level.

E. ADEQUACY OF INFRASTRUCTURE AND PERSONNEL

Assessment criteria: *In reviewing the adequacy of the infrastructure and personnel, the team reviewed the: (1) adequacy of systems to provide data and information on costs and performance; (2) whether persons responsible for contract administration represent proper disciplines and are properly trained; (3) whether internal policies and guidance are available and accurate for contract administration; (4) whether procedures and systems were well-defined and established prior to need; and (5) whether communication and feedback mechanisms were adequate.*

The review found that many of the field organizations lacked adequate systems to provide data and information on costs and performance. Also, there was a general over-reliance on invalidated contractor systems to provide such data. Examples were found where the Department did not have adequate resources or systems to develop performance and cost objectives and validation techniques. Accordingly, field offices had to rely on contractor expertise and systems to supplement its own resources. Although these supplemental actions were monitored by Federal employees, the general lack of sufficient resources and independent systems reduces the effectiveness of contract administration in this area. In this regard, it was noted that there were a number of initiatives underway at several field organizations to develop systems to provide necessary data and information on performance and to validate the contractor's systems. While all of these initiatives were not yet completed, it appears that, once in place, they could substantially improve the effectiveness of PBIs.

It was found that some of the people responsible for contract administration may not have all of the requisite skills required as the Department moves to performance-based contracting. Enhancements are needed in cost analysis and industrial process analysis skills necessary for cost and performance baseline development and maintenance. The lack of these key skills has affected performance in the following areas: validation of the life-cycle baseline; validation of cost estimates to perform individual performance objectives; validation of the actual cost to perform individual performance objectives; and implementation of cost reduction incentives.

Although most field offices have, or are in the process of, establishing formal written guidelines for the development of PBIs, such guidance did not exist for the early incentive applications. Useful procedures should address:

- the establishment and integration of performance measures;
- the selection and weighting of performance measures for the allocation of fee;

- a final, top level review of all performance objectives, measures and incentives prior to their inclusion in the contract;
- change control procedures associated with performance objectives and associated incentives; and
- the validation of contractor performance against baselines.

Many of the field offices have, or were in the process of establishing, effective communication and feedback mechanisms. However, it was noted that processes used to establish performance objectives did not always:

- provide for timely and adequate communication between the HQ' program offices and field office responsible for developing the performance objectives;
- result in adequate communication between the field office senior management and contracting and technical experts responsible for developing and administering the specific performance objectives;
- result in adequate communication between different organizations responsible for related performance;
- result in "buy-in" by those overseeing performance; and
- result in an integrated negotiation of the specific performance objective metrics with the involvement of both technical and procurement personnel.

Four problem areas were noted as follows:

(1) **Deficiencies in Performance Measurement Systems**

(a) **Nature and Extent of the Problem**
Existing information systems generally do not provide adequate data on costs, schedule and performance at the level necessary to measure performance.

(b) **Probable Cause**
Contractor cost and performance have been monitored through the use of numerous systems developed by DOE and its contractors for purposes other than the establishment of PBIs. These systems generally were not designed to collect cost and performance information at a level necessary to adequately support specific performance incentives.

(2) **Guidance and Training Inadequate**

(a) **Nature and Extent of the Problem**
While many participants have received general training in the administration of PBMCs, this unique type of contracting requires training developed specifically for the application of PBIs and performance measures. The formal guidance and training needed to develop PBIs and administer PBIs has not been defined or applied consistently. Formal written

guidance that can be applied Department-wide has not been developed by HQ. Instead, guidance has been provided in a piecemeal manner from various HQ offices across the complex.

(b) **Probable Cause**
In many cases, general PBMC and PBI training was provided to participants after award of the contracts. A more proactive approach would have better anticipated training needs prior to the award. A specific curriculum, to include DOE policies and guidance, would provide participants with a better understanding of the PBMC administration process and their roles and responsibilities relative to the process.

(3) Local Procedures Inadequate

(a) **Nature and Extent of the Problem**
Particularly at the early stages of implementation, local procedures for the development of effective PBIs was inadequate and Department-wide expectations for such guidance was ill-defined.

(b) **Probable Cause**
Newness of the concept; general inexperience and lack of insight into potential problems; and a lack of clear HQ guidance. Experience is proving to be the best teacher.

(4) Over-Reliance on Contractor Systems and Data

(a) **Nature and Extent of the Problem**
Field personnel overly relied on contractor accounting systems and contractor collected data without significant validation of the data. Many changes to PBIs and approvals of fee earned were accomplished by using contractor-generated documents. In many cases, systems were not in place to adequately support detailed cost analysis of contractor-provided data. In cases where systems were in place, those systems often were not themselves validated. This general over-reliance on contractor data that had not been validated calls into question the ability of systems to provide accurate data and information on costs and performance.

(b) **Probable Cause**
This problem relates back to the fact that M&O contractors maintain most data collection systems as part of their contract responsibilities. To a great extent, systems and procedures have not yet caught up to the change to PBMCs and the increased need for DOE personnel to verify contractor performance.

F. EFFECTIVENESS OF GOVERNMENT INSPECTION AND ACCEPTANCE PROCESSES

<u>Assessment criteria</u>: *In reviewing the effectiveness of Government Inspection and Acceptance Processes, the team examined whether the processes were adequate to: (1) establish technical, cost, and schedule performance baselines, objectives, and measurement criteria; (2) validate contractor performance-against-objectives, and costs incurred; (3) to verify completion; and (4) effect and administer changes to performance requirements and incentive allocations.*

The establishment and maintenance of appropriate baselines is critically important to the successful administration of PBIs. Such baselines are a necessary part of an effective Government inspection and acceptance process. Although many of the field organizations processes for validating contractor completion of performance objectives appeared effective, some were not established as formal procedures. In most cases, validation was supported and performed by subject matter experts with requisite skills and knowledge in the relevant functional areas. The project managers (or person with work scope responsibility) did physically inspect the completed performance for those performance objectives where completion could be observed.

The reviews noted that in some cases, adequate processes exist within the Department to validate the completion of performance objectives, particularly if the work was for, or related to, construction, environmental remediation or production activities. However, validation of the more abstract “level of effort” activity, which is a prime focus of the DOE research and development mission, was less often adequately performed. Completion was not always reasonably defined (to achieve the desired outcome) in the performance objectives, making validation difficult. The evaluation of product quality often was overlooked in favor of simple item delivery. Further, it was not clear how the contractor’s performance of incremental tasks or intermediate milestones was considered when validating the overall performance of an incentivized work effort.

Change control processes were not always in place to oversee the timely administration and integration of changes to the performance objectives. Where change control systems were in place, approved changes often were not negotiated and incorporated into the contract in a timely manner. As a consequence of the delays, and as the projects neared completion, the contractors benefited by realizing reduced cost and performance risks without offsetting reductions in fee.

The process for developing and allocating fee relies heavily on a clear understanding of the roles and responsibilities of Headquarters and field organization personnel, and the contractor responsible for performing under the contract. The goal is to establish agreement between these organizations as to the performance expectations and standards to which the contractor can be held. In many cases, it was observed that the roles and responsibilities between, and among, the Headquarters and field organizations for developing performance objectives and incentives and administering them were unclear. In some cases, this resulted in an excessive number of performance objectives, inappropriate or conflicting prioritization of objectives, inappropriate fee allocations, and inefficient contract administration.

Specific performance objectives and evaluation plans necessarily are negotiated with the contractor. Contractor involvement is a necessary part of communicating the Department's performance requirements and assuring contractor buy-in. However, the level of involvement of the contractor needs to be defined and appropriately limited, and checks and balances need to be established, to ensure the objectivity and credibility of the performance objectives and incentives.

There were three critical deficiencies cited in this area, as follows:

(1) **Inadequate Systems to Track Contractor Performance**

(a) **Nature and Extent of the Problem**

Some field organizations have systems in place to segregate and track data and establish technical, cost and schedule baselines, particularly for relatively large projects or programs. However, field organizations generally have not used these systems consistently to appropriately track performance-against objectives related to all PBIs. Further, where performance-against-objectives were measured at the incremental task level, systems often were unable to track performance at these lower levels. This problem was prevalent across the FY 1996 and FY 1997 performance measures at some Field Offices. The degree and extent of the variances in the verification process used by each Field Office were significant. Most of the variances were observed to be the result of a lack of definitive guidance that established a set of standards to follow or expectations for performing the verification.

(b) **Probable Causes**

The primary cause of not establishing technical, budget (i.e., cost estimate) and schedule baselines for performance objectives and their associated incentives was: the lack of a procedure or directive requiring they be established; the inability of existing systems to track performance at the appropriate level; and the lack of resources to develop appropriate tracking systems.

(2**) Work Incentivized at, or Near, Completion**

(a) **Nature and Extent of the Problem**

DOE and the contractor negotiate the work scope and cost on a FY basis, subject to the Department's annual appropriation. However, because the enactment of DOE's appropriations legislation often occurs subsequent to the start of the FY, the final work scope and cost is not agreed to until after the start of contractor performance. Once performance objectives were established, changes often were not recognized in formal contract language until after the work was near completion, or in a few cases, already complete.

(b) **Probable Cause**
Ideally, administrative processes and procedures for identifying, developing and negotiating incentives should be developed consistent with available funding and prior to contract award. However, some field organizations authorized the undertaking of work prior to definitizing work scope, cost and schedule. This resulted in the contractor completing significant portions of performance, thereby reducing both cost and performance risks before final agreement of the incentive.

Complicating this matter are factors such as:

(1) the timing of Congressional enactment of the DOE budget, which often is not approved until after the beginning of the FY and after contractor performance has begun;

(2) the changes to budget and scope of work transmitted by program offices to the field; and

(3) the practical bias in favor of establishing one year performance objectives and incentives instead of establishing multi-year performance objectives over the predictable life of a project or program.

(3) Unclear Roles And Responsibilities

(a) **Nature and Extent of the Problem**
The roles and responsibilities of the individuals involved in the development and administration of the PBIs have not in all cases evolved sufficiently to reflect the contract administration changes brought on by the use of PBIs.

(b) **Probable Cause**
Clearly defined roles and responsibilities, and processes for developing and formally verifying contractor performance, were not well-documented or communicated throughout all organizations. While steps were taken at some Field Officers to construct performance verification protocols, the extent and degree of verification varied greatly, based on role clarity and other factors.

VI. PROBLEM AREAS IDENTIFIED

The use of performance-based contracting, including the application of PBIs, represents a step forward for the Department. The adoption of the key feature of the performance-based approach -- the use of specific, objective performance measures focused on results -- has great potential for improving contractor performance. DOE generally has been successful in applying this feature in its PBMCs and M&I contracts. The review indicated that the use of better defined, objectives, and outcome oriented performance objectives provides better focused contractor efforts, and achieves results. Performance-based objectives have proven beneficial, regardless of whether specific incentives were employed. Accordingly, the Department should continue to apply performance-based contracting concepts, to the maximum extent practicable, to its PBMCs and M&I contracts.

However, performance-based contracting has not been easy to implement. First, the concepts are new and relatively untried in a complex operating environment, such as M&O contracts, where performance expectations are many and diverse. Little practical guidance is available through the government and the general body of knowledge is growing as a result of experience. Second, it is apparent that effective performance-based contracting requires an application of resources up-front to develop appropriate objectives, as well as post-award to ensure appropriate administration. This represents a challenge in the face of the Department's rapid downsizing.

In contrast to the general success associated with improved performance objectives, the application of PBIs to specific objectives and measures has resulted in a degree of focus on the nature, amount, and allotment of objective specific fees, that in some respects exceeded the Department's capabilities in the early stages of contract reform. The review findings suggest that the use of PBIs can be most beneficial when: they focus on critical outcomes or objectives: management establishes accurate baselines for technical, schedule, and cost performance; performance expectations are effectively communicated to the contractor; and there is agreement on the performance measures. Accordingly, the practice of using these incentives outside of the traditional award fee structure should be limited to those areas where: work outcomes can be adequately defined and are critical to the overall purpose of the contract; objective performance measures can be established; cost and performance baselines exist from which to measure performance; and effective validation processes and systems are in place.

Award fee remains a viable mechanism for motivating contractor performance in association with performance-based objectives, if appropriately administered, because there remains a legitimate need for DOE to manage aspects of contractor performance not susceptible to PBI application and to retain the management prerogative for subjective evaluations and trade-offs. While evidence exists to support the notion that award fee can be used effectively in conjunction with PBIs, the award fee structure will benefit from: greater definition of performance expectations; a focus on critical outcomes; improved balance to reduce overlap with, other incentives; and improved contract administration.

The individual reviews conducted as a part of this assessment generally indicate improvements in the use of PBIs in the later iterations of the application. This reflects a concerted effort by many field offices to apply “lessons-learned” from their initial experiences as well as the implementation of Headquarters guidance. Nonetheless, DOE's application of PBIs in the most complex of contracting environments is still in its infancy. There is much room for improvement.

Accordingly, this assessment serves as an opportunity to advance a number of recommended actions which should help to address past problems identified with PBIs and maximize the potential for effective performance-based contracting in the future.

VII. RECOMMENDATIONS

The assessment conducted by the Office of Procurement and Assistance Management, in conjunction with DOE contracting activities and program representatives identified several opportunities for both short- and long-term improvements in performance-based contracting generally, and the use of PBIs specifically. The recommendations include various suggestions previously offered by the IG. The key recommendations are:

1. Institute a more structured management approach to the development of performance-based objectives, measures, and incentive mechanisms and to the conduct of related contract administrative functions.

- For the immediate future, performance objectives and related incentives should be reviewed and approved by the Office of Procurement and Assistance Management and cognizant program organizations prior to contract award/modification to ensure that the lessons-learned from this assessment and the reviews conducted by IG are reflected in the final products.

- Within the next few months, each contracting activity that has not already done so should institute a structured process for the development of contract performance objectives and incentives consistent with Department standards. This process should include:

  - early participation by key Operations Office program, technical, and administrative personnel to ensure the identification of applicable DOE strategic, program, and site plan goals and objectives that should drive contract performance objectives;

  - management consideration of the extent to which mixed fee arrangements are consistent with the desired performance objectives and measures;

  - the identification of those objectives and measures which lend themselves to linkage with specific incentives in accordance with established criteria;

  - an assessment of the rationality of any specific financial incentives applied to individual objectives; and

  - top management verification that the nature, extent, and mix of objectives and incentive approaches are consistent with mission priorities.

- The cognizant Head of the Contracting Activity should, as part of an overall contract administration plan for each PBMC and M&I contract, identify the mechanisms, responsibilities, and authorities for ensuring that contractor performance against established objectives is appropriately monitored and that performance achievements are verified. This aspect of the plan should specifically identify the organizational element and contracting officer's representative assigned responsibility for such verification.

2. Strengthen the Department's framework of directives and instructional information on the use of PBIs.

- Identify a single authority within HQ for the issuance of guidance on the use of PBIs and their relationship to performance objectives.

- Identify a single authority within each field organization to coordinate the development of performance objectives and related incentives.

- Issue guidelines which establish specific parameters for developing performance objectives and the application of PBIs. The guidelines should, among other things, provide direction on:

    - the use of performance objectives and measures within both an award fee and an incentive fee context;

    - the appropriate relationship between award fee and incentive fee approaches;

    - the balance between subjective and objective as well as process and outcome measures;

    - the selection of the most important performance objectives for specific incentives based on mission criticality; and

    - the limitations on the use specific incentives for those objectives which are not: clearly defined; capable of objective performance measurement; susceptible to establishing a rational relationship between the objective and the fee; and subject to the identification of technical, delivery, or cost baselines and the linkage of both technical and cost incentives, as appropriate.

- Re-issue the Department's cost reduction incentive guidelines as a directive to ensure uniform application.

- Issue the Department's draft fee policy as a regulation to, among other things:

- assure the availability of award fee incentive approaches in conjunction with performance-based contracting;

- define the appropriate use of incentive fees as part of a mixed fee arrangement, establish preconditions for the use of incentive fees and provide regulatory direction on the allocation of total available fee to various incentive mechanisms, the various cost reduction incentives and the preconditions for their use;

- prevent the sub-optimization of performance against objectives not subject to specific incentives; and

- require the reduction or elimination of specific incentive fees in the event of major performance failure in unrelated areas of performance.

- Update the Department's training materials on performance-based contracting to reflect the lessons-learned from this assessment and any new directives that are issued.

- Provide ad-hoc training throughout the Department to work teams involved in the development of performance objectives and the application of incentive mechanisms.

- Require personnel involved in the development of performance objectives and the application of incentive mechanisms to have received appropriate training prior to their participation.

3. Establish support mechanisms to assist contracting activities in the development and use of PBIs.

- Create an interdisciplinary team of HQ/Field experts to assist contracting activities in identifying critical path performance requirements and applying rational and effective PBIs.

- Provide an annual "lesson learned" training forum to share experiences on creating effective objectives, measures, and incentives.

- Develop one or more models of the appropriate use of defined performance objectives within both an award and incentive fee context.

- Review, in conjunction with the Office of the Chief Financial Officer (CFO), the status of the Department's systems for the collection of cost and other data at a level adequate to establish and maintain technical and cost baselines necessary to support performance incentives. Following such review, make adjustments, as necessary.

4. Provide feedback to ensure that recommendations have been implemented and are effective.

- Within 3 months, a report of corrective actions taken by contract activities to address problems identified in individual contract reviews, and describe problem mitigation actions taken for FY 1998 objectives and incentives.

- Within 3 months, provide a status report on the implementation of the recommendations contained in this report.

- Within 18 months, provide an assessment of the effectiveness of this report's recommendations by conducting a limited review of the next two iterations of performance objectives and related incentives.

Notwithstanding severe resource constraints and personnel reductions, many of the foregoing recommendations are achievable in the near future. Indeed, a number of recommendations are already in the process of implementation; some have already been accomplished. A few of the recommendations, such as the review and potential modifications of the Department's accounting and cost collection systems and requirements, will require considerable long-term effort.

Much of the Department's success in effecting contract reforms has been dependent on wide-spread management support to change current practices and break with the culture of the past. Many of the problem areas identified in this assessment are the result of years of applying a single contacting model and related support systems to the M&O environment. The result is a contracting and program management culture that is difficult to change. Accordingly, any action to improve the Department's use of performance-based contracting is predicated on consistent and collaborative management support between and among organizational elements responsible for program and project management, financial management, field management, strategic planning, and procurement.

Further, the Department's allocation of resources will have a significant impact on how these recommendations are carried out. Therefore, in order for these recommendations to be implemented in an efficient and effective manner, it is essential that critical resources be appropriately allocated to this effort. If DOE is to be successful in continuing with its evolutionary move to adopt the approaches of performance-based contracting, the Department's limited resources will have to be focused in this direction.

LIST OF ATTACHMENTS

1. Attachment I - Charter for the Performance-Based Management Contract Assessment Team

2. Attachment II - PBI Assessment Data and Information Requirements

3. Attachment III - Performance Based Incentive Assessment Report Outline

4. Attachment IV - Listing of Contracts Reviewed Under PBI Study

Attachment I

U.S. DEPARTMENT OF ENERGY (DOE)
CHARTER FOR THE
PERFORMANCE-BASED MANAGEMENT
CONTRACT ASSESSMENT TEAM
COMBINED HEADQUARTERS, OPERATIONS AND FIELD OFFICE

1.0 INTRODUCTION

The February, 1994, Report of the CRT, Making Contracting Work Better and Cost Less, recommended that DOE use performance-based contracting approaches and strategies in its contracts for the management and operation of DOE sites and facilities. The Department, as a matter of both policy and practice, employed performance-based contracting principles in these contracts with the emphasis on results-oriented work statements, objective performance measures, and incentives to motivate contractors to excellent performance. Currently numerous contracts have been placed or modified to include these incentives. All field locations are now gaining experience in the placement and administration of these contracts. Recently, the Department of the IG issued reports on problems associated with PBIs at Richland and cost savings incentives at Rocky Flats and has ongoing investigations of PBIs at Rocky Flats and Savannah River.

2.0 AUTHORITY

On March 19, 1997, Secretary Federico Peña announced a comprehensive review of all PBMCs at the Department, to ensure that performance measures are well-defined, that incentives are rational and appropriately awarded, and that contractor performance-against-objectives are properly administered. That review would be conducted by teams composed of DOE Field and HQ representatives. He delegated the responsibility for the review to the Procurement Executive, Richard Hopf.

In a memorandum to the Heads of Field Elements (Attachment 1) dated March 27, 1997, Richard Hopf identified and categorized performance-based contracts and review responsibilities and provided a project outline. Category one assessments provide for a combined HQ, Operations and Field Office assessments.

Secretary Peña, in a memorandum to the Heads of Departmental Elements reiterated his direction to the Department's Procurement Executive to develop and coordinate a plan to accomplish this initiative and to ensure that incentives identified in the Department's contracts are rational, appropriately constructed, tied to reasonable fee incentives, and properly administered.

3.0 PURPOSE/SCOPE

The teams will assess identified contracts to assure that incentives are rational and appropriately awarded, and that contractor performance-against-objectives are properly administered. The assessment will address: (1) all aspects of PBIs and their potential relationships/impacts on award fee and cost savings programs; (2) the current state of contract administration practices used to establish contractor performance objectives, develop and allocate fee and incentive amounts, and validate (inspection and acceptance) contractor performance; (3) identification of areas where improvement is needed; and (4) recommendations for corrective actions.

4.0 ROLES/RESPONSIBILITIES

PROJECT OFFICER: Stephen Mournighan, Office of Deputy Assistant Secretary for Procurement and Assistance Management, has overall responsibility for team assessment and reporting to the Procurement Executive.

TEAM MEMBERS: The individual assessment teams will consist of senior level personnel from HQ and Field Offices.

Attachment II

INFORMATION PACKAGE
(TO BE PROVIDED BY FIELD ACTIVITIES)

FOR EACH FIELD SITE:

1. A copy of all implementation handbooks, guides, memorandum or training briefs relied on in establishing and administering performance objectives and incentives.

2. A narrative summary and/or graphical depiction (i.e., charts, slides, process maps) as appropriate, of process used to establish and administer contract performance objectives and incentives including the identification of personnel authorized to establish, monitor, modify, approve and pay individual incentives with level of review for each process and system.*

3. List of <u>all</u> contracts which include performance based incentives and cost incentives.*

4. Identify individual program offices that contributed to and/or influenced development of performance objectives and incentives.

FOR EACH APPLICABLE CONTRACT

1. A copy of specific working documents used in establishing contract performance objectives and incentives including site mission/strategic plan, multi year program plan, contract statement of work, WADs, ADS or other work authorization documents.

2. Completed data sheet (Exhibit A).*

3. Copies of all applicable contract provisions relating to establishing, administering and paying of incentives.*

4. Description of the relationship between performance incentives, award fees and any cost savings incentives. Describe rationale and approach to integration during establishment of fees/incentives and during performance. *

5. Description of the financial measurement systems used to estimate cost of performance, measure costs incurred, verify savings/overruns in incentivized areas, and controls for transmigration of costs.

FOR EACH INDIVIDUALLY INCENTIVIZED PBI WITHIN IDENTIFIED CONTRACTS (SEE EXHIBIT B)

FOR EACH INDIVIDUAL COST REDUCTION INCENTIVE (IF APPLICABLE)

1. Provide any existing documentation supporting the analysis and negotiation of the cost baseline and the share ratio. Provide the date of its approval and at what level it was approved. If no such prior documentation exists, support the reasonableness of the cost baseline and share ratio.

2. If the cost reduction incentive is not the result of a new innovative process, explain the basis for the incentive.

3. Describe and provide the rationale for the acceptance criteria used to assess the cost reduction incentive proposal.

4. When was the contractor paid for perceived cost savings? Was the contractor paid prior to final validation of cost savings? If the contractor was paid a share of cost savings, what was the benefit to the Government?

5. Description of the financial management systems used to estimate cost of performance, measure costs incurred, verify savings/overruns in incentivized areas, and controls for transmigration of costs.

***Note: Information to be provided to HQ team members prior to on-site assessment. All other items of information should be retained on-site and be available to team members during the conduct of the assessment.**

EXHIBIT B
INDIVIDUAL PBI ANALYSIS

1. Describe rationale for PBI selection. The basis for the selection of the performance objective and corresponding incentive should be addressed to the degree in which they were:

- (a) important, meaningful, and rational;
- (b) clear and understandable; and
- (c) critical to the mission and linked to both the purpose of the contract and the mission/strategic plan for the site or facility.

2. For those performance objectives where improvements in technical, schedule, and/or cost were subject to an incentive, provide rationale and anticipated benefits for applying incentive.

3. Describe rationale for assigned incentive fee amount. Relate incentive fee amount to: importance to the achievement of the performance objective; projected/actual cost of performance; and projected cost savings or actual or projected cost avoidance amounts. Support should be provided using both qualitative and quantitative information.

4. For completed PBIs, compare original estimated cost of performance to actual costs.

5. Provide the following information:

- (a) Date performance of incentivized work began;
- (b) Date PBI established;
- (c) Percentage of work complete prior to establishment of PBI, if any;
- (d) Date of informal agreement to proceed, if applicable;
- (e) Date of completion, if applicable;
- (f) If performance under the incentivized area was completed before or within two months of the contract modification date, or if substantial performance was accomplished by the contract modification date, provide rationale for (I) maintaining this incentive and (ii) beginning work prior to establishing the incentive.

6. Was PBI modified after initial establishment? If yes:

- (a) Describe change with rationale.
- (b) What was date of modification?
- (c) What was percentage of completion of work prior to change?
- (d) Did change relax requirements or make easier to accomplish?
- (e) How was change authorized? Reviewed?

7. Describe acceptance and approval process.

(a) Was process determined prior to or concurrent with PBI award?
(b) Identify major systems/processes relied on to accomplish inspection and acceptance
(c) Provide documentation of inspection/validation of completion.
(d) How was verification accomplished?

8. Provide all supporting documentation for PBI to include official PBI document, contractor statement of completion, if any, transmittal letters for deliverables, approval or disapproval documentation.

9. Identify organization responsible for establishing performance objective and incentive and a point of contact.

10. Is there current knowledge that could impact the payment of the PBI/PBF?

11. Identify and discuss lessons learned.

Attachment III

PERFORMANCE BASED INCENTIVE ASSESSMENT
REPORT OUTLINE

I. INTRODUCTION

II. BACKGROUND

III. OBJECTIVE

IV. EVALUATION METHODOLOGY

V. RESULTS OF ASSESSMENT

A. APPROPRIATENESS OF PERFORMANCE OBJECTIVES

1. Important, meaningful and rational
2. Clear and understandable
3. Critical to mission
4. Linked to purpose of contract and mission/strategic plan

B. APPROPRIATENESS OF FEE ALLOCATIONS

1. Developed in accordance with established procedures
2. Fee amounts allocated to appropriate improvements
3. Reasonable in relation to overall cost of performance.
4. Amount commensurate with importance, difficulty of task and benefits to the Government

C. EFFECTIVENESS IN IMPROVING CONTRACTOR PERFORMANCE

1. Tangible improvements over baseline achieved.
2. Representated achievement of "stretch" goals.

D. EFFECTIVENESS IN IMPROVING CONTRACTOR COST EFFICIENCIES

1. Tangible improvements over baseline achieved
2. Costs are verifiable and verified.
3. Benefits of improved performance realized

E. ADEQUACY OF INFRASTRUCTURE AND PERSONNEL

1. Adequacy of systems to provide data and information on costs and performance
2. Persons responsible for contract administration represent proper disciplines and are properly trained
3. Internal policies and guidance are available and accurate for administration of PBMC contracts

4. Procedures and systems were well-defined and established prior to need.
5. Adequacy of communication and feedback mechanisms.

F. EFFECTIVENESS OF GOVERNMENT INSPECTION AND ACCEPTANCE PROCESSES

1. Adequate to establish technical, cost, and schedule performance baselines, objectives, and measurement criteria
2. Adequate to validate contractor performance-against-objectives, and costs incurred.
3. Adequate to verify completion
4. Adequate to effect and administer changes to performance requirements and incentive allocations.

VI. PROBLEM AREAS IDENTIFIED

A. NATURE OF PROBLEM

B. EXTENT OF PROBLEM

C. ROOT CAUSE OF PROBLEM

D. RECOMMENDED SOLUTION

VII. RECOMMENDATIONS FOR FUTURE ACTIONS.

Attachment IV **Listing of Contracts Reviewed Under PBI Study**

Category One: Combined Headquarters, Operations and Field Office Assessments

	Contractor	Site	Operations/Field Office
1.	Allied-Signal Inc.	Kansas City Plant	AL
2.	University of Chicago	Argonne National Lab.	CH
3.	Lockheed Idaho Tech. Co.	Idaho National Engr. Lab.	ID
4.	Bechtel Nevada Corp.	Nevada Test Field Office	NV
5.	Fluor-Daniel Envir. Mgmt Corp.	Fernald Envir. Mgmt. Project	OH
6.	Lockheed Martin Engr. Systems	Oak Ridge Complex	OR
7.	Westinghouse SR Co.	Savannah River Lab.	SR
8.	Kaiser-Hill LLC	Rocky Flats Envir. Tech. Field Office	RFO
9.	Lockheed Idaho Tech. Co.	Specific Manufacturing Plant	ID

Category Two: Operations and Field Office Self-Assessments

1.	Mason & Hanger-Silas Mason Co.	Pantex Plant	AL
2.	Westinghouse Electric Corp.	Waste Isolation Pilot Plant	AL
3.	Iowa State University	Ames Lab.	CH
4.	Princeton University	Princeton Plasma Physics Lab.	CH
5.	URA Inc.	Fermi National Accelerator Lab.	CH
6.	Westinghouse-West Valley	West Valley Project	OH
7.	Dyn McDermott Co.	Strategic Petroleum Reserve	SP
8.	Westinghouse-Hanford	Hanford	RL
9.	Fluor-Daniel	Hanford	RL
10.	Bechtel	Hanford	RL
11.	Battelle	PNNL	RL